

Администрирование сетевых подсистем

Лабораторная работа №13

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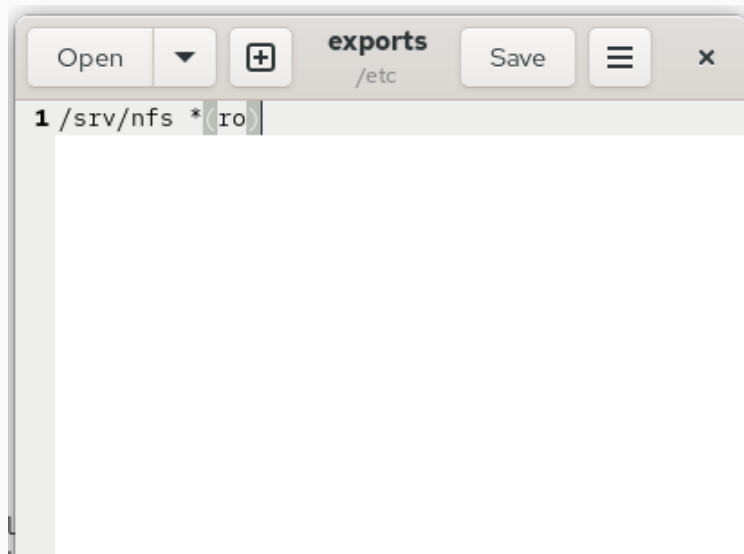
06 декабря 2025

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Цель работы

Получение практических навыков настройки сервера и клиента NFS, публикации каталогов, назначения прав доступа и автоматизации конфигурации средствами provisioning.

Ход выполнения



```
Installed:
gssproxy-0.9.2-10.el10.x86_64      libev-4.33-14.el10.x86_64      libnfsidmap-1:2.8.3-0.el10.x86_64
libverto-libev-0.3.2-10.el10.x86_64  nfs-utils-1:2.8.3-0.el10.x86_64  rpcbind-1.2.7-3.el10.x86_64
sssd-nfs-idmap-2.11.1-2.el10.1.1.x86_64

Complete!
[root@server.dgavdadaev.net ~]# mkdir -p /srv/nfs
[root@server.dgavdadaev.net ~]# gedit /etc/exports
[root@server.dgavdadaev.net ~]# semanage fcontext -a -t nfs_t "/srv/nfs(/.*)?"
[root@server.dgavdadaev.net ~]# restorecon -vR /srv/nfs
Relabeled /srv/nfs from unconfined_u:object_r:var_t:s0 to unconfined_u:object_r:nfs_t:s0
[root@server.dgavdadaev.net ~]# systemctl start nfs-server.service
[root@server.dgavdadaev.net ~]# systemctl enable nfs-server.service
Created symlink '/etc/systemd/system/multi-user.target.wants/nfs-server.service' → '/usr/lib/systemd/system/nfs-server.service'.
[root@server.dgavdadaev.net ~]# firewall-cmd --add-service=nfs
success
[root@server.dgavdadaev.net ~]# firewall-cmd --add-service=nfs --permanent
success
[root@server.dgavdadaev.net ~]# firewall-cmd --reload
success
[root@server.dgavdadaev.net ~]# █
```

Рис. 2: Настройка firewalld

```
sssd-proxy-2.11.1-2.el10_1.1.x86_64
Installed:
gssproxy-0.9.2-10.el10.x86_64                libev-4.33-14.el10.x86_64
libnfsidmap-1:2.8.3-0.el10.x86_64            libverto-libev-0.3.2-10.el10.x86_64
nfs-utils-1:2.8.3-0.el10.x86_64              rpcbind-1.2.7-3.el10.x86_64
sssd-nfs-idmap-2.11.1-2.el10_1.1.x86_64

Complete!
[root@client.dgavdadaev.net ~]# showmount -e server.dgavdadaev.net
clnt_create: RPC: Unable to receive
[root@client.dgavdadaev.net ~]# showmount -e server.dgavdadaev.net
Export list for server.dgavdadaev.net:
/srv/nfs *
[root@client.dgavdadaev.net ~]#
[root@client.dgavdadaev.net ~]# showmount -e server.dgavdadaev.net
Export list for server.dgavdadaev.net:
/srv/nfs *
[root@client.dgavdadaev.net ~]# █
```

Рис. 3: Проверка showmount

```
root@client.dgavdadaev.net ~]#  
root@client.dgavdadaev.net ~]# mkdir -p /mnt/nfs  
root@client.dgavdadaev.net ~]# mount server.dgavdadaev.net:/srv/nfs /mnt/nfs  
root@client.dgavdadaev.net ~]# mount | grep nfs  
server.dgavdadaev.net:/srv/nfs on /mnt/nfs type nfs4 (rw,relatime,vers=4.2,rsize=262144,wsz=262144,na  
mlen=255,hard,proto=tcp,timeo=600,retrans=2,sec=sys,clientaddr=192.168.1.30,local_lock=none,addr=192.16  
8.1.1)  
root@client.dgavdadaev.net ~]#
```

Рис. 4: Монтирование NFS


```
[root@client.dgavdadaev.net ~]#  
[root@client.dgavdadaev.net ~]# systemctl status remote-fs.target  
● remote-fs.target - Remote File Systems  
   Loaded: loaded (/usr/lib/systemd/system/remote-fs.target; enabled; preset: enabled)  
   Active: active since Sat 2025-12-06 08:13:55 UTC; 14min ago  
  Invocation: c34459e4f2ef41408c8afad25c3b7648  
     Docs: man:systemd.special(7)  
  
Dec 06 08:13:55 client.dgavdadaev.net systemd[1]: Reached target remote-fs.target - Remote File System>  
[root@client.dgavdadaev.net ~]#  
[root@client.dgavdadaev.net ~]# mount -a  
[root@client.dgavdadaev.net ~]# mount | grep nfs  
server.dgavdadaev.net:/srv/nfs on /mnt/nfs type nfs4 (rw,relatime,vers=4.2,rsize=262144,wsize=262144,na  
mlen=255,hard,proto=tcp,timeo=600,retrans=2,sec=sys,clientaddr=192.168.1.30,local_lock=none,addr=192.16  
8.1.1)  
[root@client.dgavdadaev.net ~]# █
```

Рис. 5: remote-fs.target

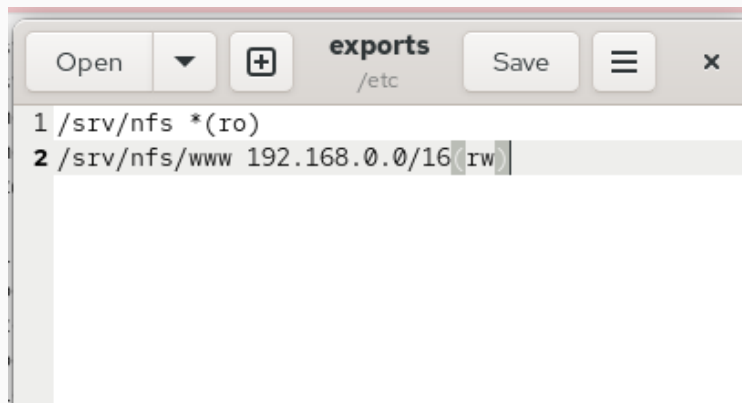
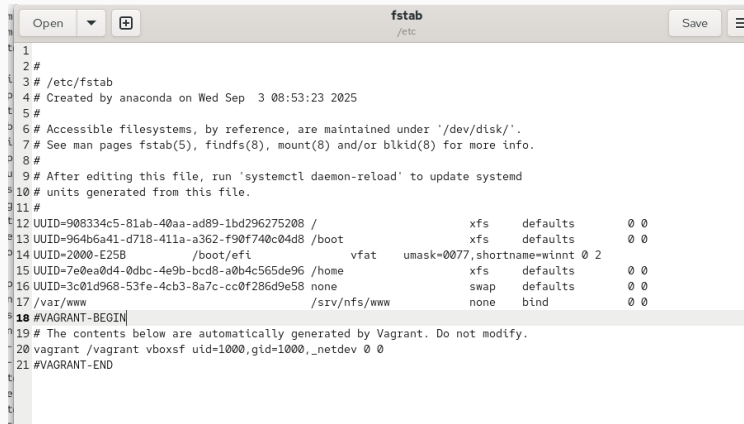


Рис. 6: Экспорт www



```
1
2 #
3 # /etc/fstab
4 # Created by anaconda on Wed Sep  3 08:53:23 2025
5 #
6 # Accessible filesystems, by reference, are maintained under '/dev/disk/'.
7 # See man pages fstab(5), findfs(8), mount(8) and/or blkid(8) for more info.
8 #
9 # After editing this file, run 'systemctl daemon-reload' to update systemd
10 # units generated from this file.
11 #
12 UUID=908334c5-81ab-40aa-ad89-1bd296275208 /                xfs     defaults        0 0
13 UUID=964b6a41-d718-411a-a362-f90f740c04d8 /boot              xfs     defaults        0 0
14 UUID=2000-E25B      /boot/efi          vfat     umask=0077,shortname=winnt 0 2
15 UUID=7e0ea0d4-0dbc-4e9b-bcd8-a0b4c565de96 /home              xfs     defaults        0 0
16 UUID=3c01d968-53fe-4cb3-8a7c-cc0f286d9e58 none               swap     defaults        0 0
17 /var/www            /srv/nfs/www       none     bind            0 0
18 #VAGRANT-BEGIN
19 # The contents below are automatically generated by Vagrant. Do not modify.
20 vagrant /vagrant vboxsf uid=1000,gid=1000,_netdev 0 0
21 #VAGRANT-END
```

Рис. 7: fstab www

```
[root@server.dgavdadaev.net ~]#  
[root@server.dgavdadaev.net ~]# mkdir -p /srv/nfs/www  
[root@server.dgavdadaev.net ~]# mount -o bind /var/www/ /srv/nfs/www/  
[root@server.dgavdadaev.net ~]# ls /srv/nfs/  
www  
[root@server.dgavdadaev.net ~]# gedit /etc/exports  
[root@server.dgavdadaev.net ~]# exportfs -r  
[root@server.dgavdadaev.net ~]# gedit /etc/fstab  
[root@server.dgavdadaev.net ~]# exportfs -r  
[root@server.dgavdadaev.net ~]# mount -a  
[root@server.dgavdadaev.net ~]# █
```

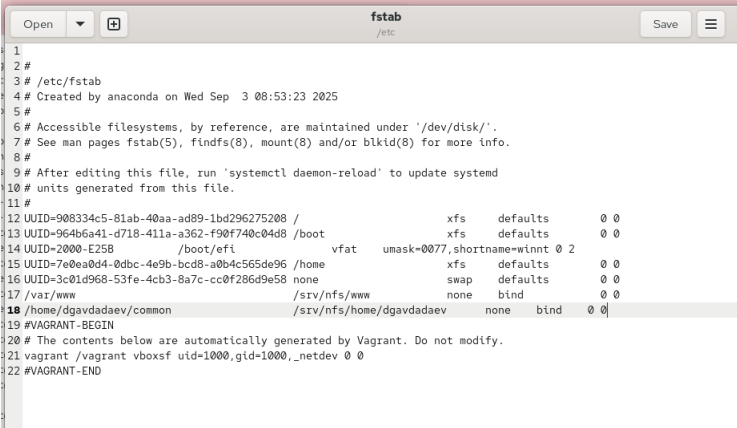
Рис. 8: Проверка www

```
[dgavdadaev@server.dgavdadaev.net ~]$  
[dgavdadaev@server.dgavdadaev.net ~]$ mkdir -p -m 700 ~/common  
[dgavdadaev@server.dgavdadaev.net ~]$ cd  
[dgavdadaev@server.dgavdadaev.net ~]$ cd common/  
[dgavdadaev@server.dgavdadaev.net common]$ touch dgavdadaev@server.txt  
[dgavdadaev@server.dgavdadaev.net common]$ ls  
dgavdadaev@server.txt  
[dgavdadaev@server.dgavdadaev.net common]$ █
```

Рис. 9: Каталог common



Рис. 10: export home



```
1
2 #
3 # /etc/fstab
4 # Created by anaconda on Wed Sep  3 08:53:23 2025
5 #
6 # Accessible filesystems, by reference, are maintained under '/dev/disk/'.
7 # See man pages fstab(5), findfs(8), mount(8) and/or blkid(8) for more info.
8 #
9 # After editing this file, run 'systemctl daemon-reload' to update systemd
10 # units generated from this file.
11 #
12 UUID=908334c5-81ab-40aa-ad89-1bd296275208 /                xfs     defaults        0 0
13 UUID=964b6a41-d718-411a-a362-f90f740c04d8 /boot              xfs     defaults        0 0
14 UUID=2000-E258      /boot/efi          vfat     umask=0077,shortname=winnt 0 2
15 UUID=7e0ea0d4-0dbc-4e9b-bcd8-a0b4c565de96 /home              xfs     defaults        0 0
16 UUID=3c01d968-53fe-4cb3-8a7c-cc0f286d9e58 none               swap     defaults        0 0
17 /var/www             /srv/nfs/www       none     bind            0 0
18 /home/dgavdadaev/common /srv/nfs/home/dgavdadaev none     bind            0 0
19 #VAGRANT-BEGIN
20 # The contents below are automatically generated by Vagrant. Do not modify.
21 vagrant /vagrant vboxsf uid=1000,gid=1000,_netdev 0 0
22 #VAGRANT-END
```

Рис. 11: fstab home

```
[dgavdadaev@client.dgavdadaev.net ~]$  
[dgavdadaev@client.dgavdadaev.net ~]$ cd /mnt/nfs/home/dgavdadaev/  
[dgavdadaev@client.dgavdadaev.net dgavdadaev]$ ls  
dgavdadaev@server.txt  
[dgavdadaev@client.dgavdadaev.net dgavdadaev]$ touch dgavdadaev@client.txt  
[dgavdadaev@client.dgavdadaev.net dgavdadaev]$ ls  
dgavdadaev@client.txt  dgavdadaev@server.txt  
[dgavdadaev@client.dgavdadaev.net dgavdadaev]$ ls -l  
total 0  
-rw-r--r--. 1 dgavdadaev dgavdadaev 0 Dec  6 08:38 dgavdadaev@client.txt  
-rw-r--r--. 1 dgavdadaev dgavdadaev 0 Dec  6 08:34 dgavdadaev@server.txt  
[dgavdadaev@client.dgavdadaev.net dgavdadaev]$ sudo -i  
[sudo] password for dgavdadaev:  
[root@client.dgavdadaev.net ~]# cd /mnt/nfs/home/dgavdadaev/  
-bash: cd: /mnt/nfs/home/dgavdadaev/: Permission denied  
[root@client.dgavdadaev.net ~]#
```

Рис. 12: Работа пользователя


```
[dgavdadaev@server.dgavdadaev.net ~]$  
[dgavdadaev@server.dgavdadaev.net ~]$ mkdir -p -m 700 ~/common  
[dgavdadaev@server.dgavdadaev.net ~]$ cd  
[dgavdadaev@server.dgavdadaev.net ~]$ cd common/  
[dgavdadaev@server.dgavdadaev.net common]$ touch dgavdadaev@server.txt  
[dgavdadaev@server.dgavdadaev.net common]$ ls  
dgavdadaev@server.txt  
[dgavdadaev@server.dgavdadaev.net common]$  
[dgavdadaev@server.dgavdadaev.net common]$ ls -l  
total 0  
-rw-r--r--. 1 dgavdadaev dgavdadaev 0 Dec  6 08:38 dgavdadaev@client.txt  
-rw-r--r--. 1 dgavdadaev dgavdadaev 0 Dec  6 08:34 dgavdadaev@server.txt  
[dgavdadaev@server.dgavdadaev.net common]$
```

Рис. 13: Появление файла

Выводы

- Настроены экспортируемые каталоги NFS
- Реализовано bind-монтирование системных и пользовательских каталогов
- Обеспечены корректные права доступа и безопасность
- Настроено автоматическое монтирование
- Созданы provisioning-скрипты для полной автоматизации настройки сервера и клиента